Power BI Interview Questions & Answers

1. **What is Power BI, and why is it used?**
   Power BI is a business analytics tool by Microsoft that helps visualize data, create reports, and share insights. It's used for data analysis, interactive dashboards, and decision-making.

2. **What are the main components of Power BI?**

   - Power BI Desktop
   - Power BI Service
   - Power BI Mobile
   - Power BI Gateway
   - Power BI Report Server

3. **What is the difference between Power BI Desktop and Power BI Service?**

   - **Desktop**: Used to build reports (development tool).
   - **Service**: Cloud platform for sharing, collaboration, and dashboards.

4. **What are the different data connectivity modes in Power BI?**

   - **Import Mode**: Data stored in Power BI, faster performance.
   - **DirectQuery**: Queries data directly from source, real-time updates.
   - **Live Connection**: Direct connection to Analysis Services models.

Data Transformation & Modeling

5. **What is Power Query?**
   Power Query is a tool in Power BI used for data extraction, transformation, and loading (ETL). It cleans and prepares data before modeling.

6. **What are relationships in Power BI?**
   Relationships define how tables connect (one-to-many, many-to-one). They allow users to build models and use fields across tables.

7. **What is the difference between a fact table and a dimension table?**

   o **Fact table**: Contains numeric, measurable data (e.g., sales amount).

   o **Dimension table**: Contains descriptive attributes (e.g., product, region).

8. **Explain Star Schema vs. Snowflake Schema.**

   o **Star Schema**: Fact table in the center with dimension tables around it.

   o **Snowflake Schema**: Similar but dimensions are normalized into multiple related tables.

DAX (Data Analysis Expressions)

9. **What is DAX in Power BI?**
   DAX is a formula language used in Power BI to create calculations, measures, and calculated columns.

10. **Difference between Calculated Column and Measure?**

- **Calculated Column**: Computed at row level, stored in model, consumes memory.

- **Measure**: Computed at query time, more efficient, used in visuals.

11. **What is the difference between SUM() and SUMX()?**

- **SUM()**: Adds values from a column.

- **SUMX()**: Iterates row by row, applies expression, then sums results.

12. **What is CALCULATE() in DAX?**
   CALCULATE() modifies filter context and performs calculations under new conditions. Example: Sales for a specific region.

13. **What is the difference between ALL() and ALLEXCEPT()?**

- **ALL()**: Removes all filters from a table/column.

- **ALLEXCEPT()**: Removes filters from all columns except the specified ones.

Visualization & Reports

14. **What is a slicer, and how is it different from a filter?**

- **Slicer**: A visual element for filtering data interactively.

- **Filter**: Applied at report/page/visual level, less interactive.

15. **What is drill-down and drill-through in Power BI?**

- **Drill-down**: Navigate hierarchy (e.g., Year → Month → Day).

- **Drill-through**: Navigate to a different page focused on selected context.

16. **What are tooltips in Power BI?**
    Tooltips show additional information when hovering over a data point (default or custom).

Power BI Service & Security

17. **What are dashboards, and how are they different from reports?**

- **Dashboard**: Single-page, high-level KPIs, from multiple reports.

- **Report**: Multi-page, detailed visuals, built from one dataset.

18. **What is Row-Level Security (RLS)?**
    RLS restricts data access for users based on roles. Example: A sales manager only sees sales for their region.

19. **How do you schedule data refresh in Power BI?**
    In Power BI Service → Dataset → Schedule Refresh → Set frequency and time.

20. **If a report is slow, how would you optimize it?**

- Reduce dataset size.

- Use star schema (avoid snowflake).

- Optimize DAX measures.

- Use Import mode instead of DirectQuery (if possible).

- Limit visuals per page.